MI Travel Counts
Pilot Report

April 14, 2004

Prepared For:

Michigan Department of Transportation
Murray D. Van Wagoner Building
P.O. Box 30050
Lansing, MI 48909

Prepared By:

MORPACE International, Inc.
Transportation & Public Policy Division
31700 Middlebelt Road, Suite 200
Farmington Hills, MI 48334

(248) 737-5300

Jobs M030504 – M030505

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Executive Summary

Quoting from a review of the Pilot by Peter Stopher, Ph.D., a MI Travel Counts subconsultant and an internationally recognized expert in travel survey design and execution:

" This appears to have been a successful pilot that promises well for the full data collection effort. The few changes that have been made are useful and show the value of the pilot survey process. (The Pilot) has helped to refine the final procedures in important ways, and that paves the way for a high quality program."

This Pilot Report evaluates the effectiveness of sixteen different task elements. The general outcome of these evaluations as documented in the report is:

1. Public Awareness Plan

   The Plan was implemented and responses to notification letters to the legislature and local planning agencies and to press releases were positive. No complaints were received. No changes in the Public Awareness Plan are recommended

2. Toll-Free Information Number

   As a result of the Pilot, no changes are recommended to the toll-free number protocol. No complaints were received.

3. Functional Website

   No changes to the MI Travel Counts website are recommended after the Pilot. The website is considered by MORPACE to be a significant asset for encouraging participation in the study.

4. Sample Design Technical Document and Procedures

   The Pilot response rates are adequate to very good. The Pilot participation rate of 55% is well above the 50% expected average rate obtained by other travel inventories conducted within recent years Pilot CATI sample tallies for both the recruit and the retrieval are attached as Appendix A.

   In regard to achieving the representativeness of the sample, close, real-time monitoring will be necessary to achieve Census proportionality within sampling area, household size, number of household vehicles, number of workers, and household income. Corrective actions in the form of a higher number of callbacks to households in difficult to fill data cells, rescheduling of underrepresented recruited households, and increased or targeted sampling frames will most likely be required.

5. Data Collection Methodology Plan

   No recommendations for changes in the Data Collection Methodology Plan are considered necessary as a result of the Pilot.

6. Pre-Notification Letter
   The pre-notification letter significantly increased the participation of households in the project. Only minor revisions in wording were recommended as a result of the Pilot and the MDOT Project's phone number was changed. The revised pre-notification letter is attached as Appendix B.

7. Recruit Instrument and CATI recruit script and system

As a result of either MDOT/MORPACE monitoring of Pilot recruit interviews or post processing data checks a few minor changes in the recruit instrument are recommended and include:

- Adding "bus or" transit to the transit pass question for greater respondent understanding ("Do you have a bus or transit pass?")
- If the respondent has a transit pass, adding a question as to how much they pay for the pass in dollars and cents, and then on what basis (annual, monthly, weekly, etc.)
- Adding "nearest" to the cross streets question ("What are the nearest cross streets?")
- For both household members and visitors, adding "16 years or older" and "currently" to the employment question ("Including yourself, how many of the people**, 16 years of age or older,** living in your household are **currently** employed?")
- Combining the city and township questions for easier sample area identification ("What city or township do you live in?")
- For both household members and visitors, asking age, first as an open-ended question to save interviewing time, and then reading age response categories for those who refuse or don't know exact age.
- If CATI monitoring by age within *sampling areas* indicates that Census targets have been reached for persons age 65 or older, the following question will be added to the beginning of the recruit: "Is anyone in you household under age 65?" If not, the household will be terminated.

Recommended changes in the recruit instrument are further detailed in Appendix C.

8. Diary Cover Letter

In the diary cover letter, the word "statistical" has been taken out and the rest of the sentence has been modified as follows: "The information you provide will only be used for the statistical purposes of this study. It will be kept **confidential** and **secure**." The MDOT project director's phone number has also been revised. The revised Diary cover letter is attached as Appendix D.

9. Diary

A review of the 50 diaries received by mail strongly indicates that respondents fully understood the instructions, content, format, and flow. The following minor changes are recommended for the diary.

- In the Activity Choices definitions on page 2, added explanation will be given to Work: Work (employment and job-related activities)
- The "Start Recording Here" note will be deleted. The "Start Here" in the black box will be changed to "Start **Recording** Here".
- As per modeling requirement clarifications from PB, a global change will be made: Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.
- Other minor changes were made in the bulleted instructions on page1.

10. Person Information Sheet

The purpose of the Person Information Sheet is to let each member of the household know what personal information is required of them in order for their retrieval interview to be

complete. Respondents fully understood the instructions, content, format, and flow. The following minor changes are recommended:

- The first answer category for work flexibility will be changed to: "I have no flexibility in my work schedule."
- Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.
- For clarity, changing the industry question wording to: "What is (your/NAME's) **employer's** industry?"

11. Reminder script

No changes are recommended for the reminder script.

12. Data Retrieval Instrument and CATI retrieval CATI script and system

The length of the retrieval interview per person and per household is at the outside limits of average lengths for household travel inventories, but there were less than five mid-interview household terminates. Offering mailback and Internet options for data retrieval are essential to reducing respondent burden, especially for 3+ person households. Minor changes recommended include the following:

- Delete the "at this location" at the end of the question: "What time did (you/NAME) ARRIVE?"
- Added additional city names
- Adding text to the question and an interviewer note: "Are you/Is NAME currently attending **any level of** school?
- To match the updated person information sheet, the first answer category should be changed to: "I have no flexibility in **my work schedule**."
- For clarity, changing the industry question to: "What is (your/NAME's) **employer's** industry?" Also adding the following interviewer note: (IF NEEDED: By industry, we mean the employer's principal business or activity.)
- Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category
- Minor wording changes in questions regarding bus, dial-a-ride, and taxi-/shuttle provider and payment questions
- Deleting the probe of "Did you stop anywhere along the way?" per discussions at the MDOT project meeting on February 26th.
- Assuring times come up for the accompanying household member when a trip was previously reported by another member.
- A few additional changes to the retrieval instrument made as a result of the Pilot are shown under Task Element 15: Data Coding and Quality Control Manual and Procedures.

13. Interviewer Training Manual

All changes made to project instruments and materials will be made to and updated in the MI Travel Counts Interviewer Training Manual. A handout will be added to the Interviewer Guidebook with additional information on the activity codes.

14. Data Coding Structure

As a result of MDOT review at the February 26, 2004 meeting, minor changes were made to the code lists including expansion of column width to accommodate TAZ numbers and adding

fields for the originally reported location address. Complete revised variable code lists are provided in Excel file format as Appendix E to this Pilot Report.

15. Data Coding and Quality Control Manual and Procedures

As part of the Data Coding and Quality Control Manual, MORPACE Post-Processing Data Checks have been developed. The revised document is attached as Appendix F. This list includes MORPACE benchmarks that are used to judge data quality. Finally, a List of Post-Processing Audit Checks by PB is provided as Appendix G.

MORPACE's Pilot frequency results (Appendix H_1 through H_4) and post processing data checks show that data is consistent, missing data is minimal, and an appropriate level of data detail has been collected. To accomplish completed data information objectives and reach sampling targets, detailed sampling in-area monitoring will be necessary to assure proportional geographic representation and filling of sampling data cells. This monitoring will also be required to assure sampling representation by household size and age of persons and to determine whether declining rates in reported Day 2 trips are acceptable. Agreement with these goals is also expected to require the implementation of the following alternative strategies:

1. Increasing callbacks to difficult to reach data cell households for both the recruit and the retrieval (including day time retrieval interviewing).
2. Increasing sample replicates and/or ordering targeted sampling frames (such as supplemental income targeted RDD samples within areas).
3. Rescheduling recruited households who fail to complete the retrieval for all household members on their assigned travel days.
4. Developing and implementing special techniques to assure acceptable Day 2 trip rates. Such techniques might include an interviewer script when 3 a.m. at the end of the first travel day is reached to the effect that "it is very important to the results of this study that you report as much detail about all of your locations and travel for this next 24 hours as you did for the last 24 hours."
5. If CATI monitoring by age within sampling areas indicates that Census targets have been reached for persons 65 or older, the following question will be added to the beginning of the recruit: "Is anyone in you household under age 65?" If not, the household will be terminated.

Parsons Brinckerhoff (PB) conducted audit checks of Pilot data as specified in the Data Coding and Quality Control Manual. Inconsistencies in data found were minor and correctable. Using TransCAD, PB conducted time and speed checks between trip origin and destination points and constructed a questionable trip list based on the results. Additionally, PB constructed a table for review of possible non-geocoding errors or corrections. MORPACE then reviewed these two trip audit tables, and data for questionable households comprehensively as specified in the Manual. Based on findings, MORPACE-PB recommended that 11 households (8.7%) be deleted from the final Pilot dataset (9 due to time and distance problems that could not be corrected and 2 based on missing more than one geocode).

To minimize time and distance problems for MI Travel Counts, MORPACE_PB have recommended to following changes:

1. Due to the number of short trips identified by PB's time and distance trips criteria for speed checks have been modified as follows:

   Trips less than 2 miles in length and also 30 minutes in time will be considered acceptable due to short distance and time. Trips that are flagged

will have 10 minutes added and subtracted from the trip length and new speed computed. If the new speed is still not within the speed parameters, the record will be flagged and reviewed.

2. Adding a programmed question to the CATI to confirm with the respondent that the trip took over one hour to complete, when this is recorded.

3. Increased emphasis on phone room supervisor and interviewer training in regard to time recording.

4. Adding two questions at the end of the daily travel collection which are (if the respondent reported any trips over one hour during their travel period):

   Did any of the trips you've reported take significantly longer than usual? (Yes/No)

   (IF YES)
   Was this due to: (READ LIST)
   01 Weather (rain or snow)
   02 Construction
   03 An accident
   04 Traffic congestion

16. Geocoding Manual

For the Pilot, all locations (home, school, work, and trip locations) were put through an extensive geocoding process according to the MI Travel Counts Geocoding Procedures Manual, which details the requirements and steps for geocoding. Pilot geocoding results are show in Table 7, beginning on page 33. The Pilot met the specified requirements of the Geocoding Procedures Manual. No recommendations in addition to those specifications of the Manual are recommended as a result of the Pilot.

Subconsultant reviews of the Pilot and this report can be found in section D starting on page 35.

A. Introduction

The objective of MI Travel Counts is to obtain accurate information on travel characteristics for use in developing and calibrating travel demand forecasting models for the state and 14 Metropolitan Planning Organizations within the state of Michigan. To accomplish this, the state has been stratified into seven sampling areas. Each stratum is defined by a collection of counties or other geographically defined entities that are either geographically contiguous, or similar with respect to the types of travel patterns and behaviors generated by households within those sampling areas. The seven sampling areas are the following:

1. SEMCOG (Southeast Michigan Council of Governments)
2. Small Cities
3. Upper Peninsula Rural
4. Northern Lower Peninsula Rural
5. Southern Lower Peninsula Rural
6. Transportation Management Areas (TMAs)
7. Small Urban-Modeled Areas

Specifically, the purpose of the MI Travel Counts program is to collect data on travel over a 48-hour period for all members of 14,280 households. (2,040 within each of seven sampling areas defined in the MI Travel Counts Sample Design Technical Document.) Sampling within area will be proportional to the 2000 Census 5-percent sample Public Use Microdata Areas (PUMAs) data in terms of the demographic variables of interest: household size, number of vehicles, and number of workers. MI Travel Counts is designed to collect data on the number, length, purpose, mode, and time of day that activities and trips are made by persons within each sampled household during an assigned 48-hour period. Basic demographic and attribute household and person information is also collected. In addition, each respondent is asked about long distance trips over 100 miles that they have made within the past three months. Overnight visitors to recruited households will be asked to report their travel for the period of their visit that coincides with their host household's assigned 48-hour travel recording period.

Draft initial and initial data collection instruments, procedures, and protocols for collecting the desired activity and travel data were developed in conjunction with MDOT from November 6th of 2003 until January 23rd of 2004. Study design includes the following draft task elements:

1. Public Awareness Plan
2. Toll-Free Information Number
3. Functional Website
4. Sample Design Technical Document and Procedures
5. Data Collection Methodology Plan
6. Pre-Notification Letter
7. A Recruit Instrument and Computer Assisted Telephone Interview (CATI) recruit script and system
8. Diary Cover Letter
9. Diary
10. Person Information Sheet
11. Reminder Script
12. Data Retrieval Instrument and CATI script and system
13. Interviewer Training Manual
14. Data Coding Structure
15. Quality Control Manual
16. Geocoding Procedures Manual

B. Pilot Parameters and Criteria

The purpose of the Pilot is to test the performance of the above draft materials and procedures. A Pilot of the data collection effort was conducted from January 26th to February 10th of 2004. The above draft materials and procedures were tested with the following exceptions:

1. Within area sample monitoring procedures and parameters based on census data were not tested as part of the Pilot. The contract proposal specified a Pilot sample size of 100 completed households; 126 households were actually completed. Regardless, the Pilot sample size is insufficient to evaluate data cell filling difficulties on an in-area basis. Evaluation on a statewide level is included in this Pilot Report and is expected to reflect general in-area data cell filling difficulties and requirements. Within sampling area proportional attainment difficulties cannot be evaluated in the Pilot, given area small sample sizes.

2. While the Public Awareness Plan was implemented successfully, additional press releases and follow-ups were postponed until project start-up due to the short timeframe for the Pilot.

3. Due to time constraints, the Internet retrieval was not tested for the pilot. MORPACE plans to delay the start of the Internet retrieval by at least one week from the start of the phone retrieval, so that any minor retrieval issues can be resolved prior to launching the Internet version.

Pilot findings are presented in this report in order of the 16 draft task elements listed in Section A, as modified by the three exceptions above. Each section contains a brief description of the task element tested, followed by a discussion of Pilot execution successes and difficulties, and the solutions and recommendations for correction.

Additional Pilot Criteria
The findings of the Pilot are additionally assessed throughout against a set of five criteria developed for pilot travel inventories conducted elsewhere. These criteria, as described below, help identify problems and guide modifications for the final MI Travel Counts. Evaluations pertaining to these criteria are integrated within the findings and solutions individually presented for each task.

1. Achieving data consistency
2. Collecting an appropriate level of data detail
3. Minimizing respondent burden
4. Reaching sampling targets
5. Accomplishing completed data information objectives

Each of these criteria have been identified by past experience as having unique components and challenges, inherent with either the mail-out diary and CATI recruit and retrieval instruments designed for travel surveys, or in planned quality control measures for these efforts. Thus, the MI Travel Counts Pilot includes evaluation of these factors. The predetermined challenges of each criterion are as follows:

1. Achieving Data Consistency

A primary goal of the MI Travel Counts Pilot is to use the full benefits of MORPACE's customized CATI system to ensure improved consistency of the data collected. Data consistency is a persistent issue for travel inventories because different respondents tend to approach the task requested of them in different ways. While the conscientious respondent provides detailed information about all activities and stops, including changes in travel modes, other respondents seem to assume that the researcher cannot possibly be expecting that level of detail. How to best encourage consistent reporting of activity and travel information among all respondents, or at least the greatest number of respondents, is the challenge.

To address this issue, extensive effort was allocated to developing a travel diary instrument that was clear and inclusive of all travel information needed. The pilot CATI retrieval instrument carefully followed the diary format.

2. Collecting an Appropriate Level of Data Detail

MI Travel Counts is designed to collect travel information from all members of a household over a 48-hour period. This is an extensive requirement in itself, but, in addition, there is the need to obtain the address information for all locations visited along the way. The question is always whether sufficient information is being collected both for accurately detailing travel and for geocoding all or most origin and destination points.

3. Minimizing Respondent Burden

Confusing questions, long interview length, and worries about confidentiality are taxing to the respondent in travel inventories. Minimizing respondent burden while still obtaining the desired information is an important goal. The major sources of respondent burden tested by the Pilot were:

- Interview length
- Clarity; confusing questions, order, or formats that are frustrating to respondents
- Degree of flexibility provided to respondents in how and when they respond
- Appropriate attention to confidentiality and privacy concerns

4. Reaching Sample Targets

MI Travel Counts is to provide completed interview data for all members of a representative sample of 2,040 households within each defined sampling area, by the variables of interest: household size, number of vehicles, and number of workers. Representative variables of measure in addition to these are geography within sampling area, household income, age of respondents, and trip making. Previous household travel surveys have traditionally underrepresented large households and have also had underreporting of household income.

The Pilot results are a useful basis for predicting success in attaining sample targets, and a valuable reference for adjusting instruments and procedures as needed to meet goals.

5. Accomplishing Completed Data Information Objectives

Missing data is a problem in any data collection research effort. The Pilot results are expected to be the basis for determining missing data tolerances, i.e., what constitutes a completed household interview? Such a process always involves some trade-offs. For MI Travel Counts, data variables considered essential are household size, number of vehicles, employment status of each person, household income, age of persons, and the address (or nearest street intersection). (The complete listing of data items required for a household to be complete is located in the RFP). While researchers would like to have complete data cells for all items, eliminating whole households due to missing or refused information from one member can introduce considerable research bias. In the real world, respondents may legitimately not know the answer or refuse to answer questions. The Pilot is a source for examining the reasonableness, or acceptable circumstances, for missing data. Key missing Pilot data items are as shown in Table 2 (page 13), Table 3 (page 27), and Table 4 (page 28).

Objective Pilot Research Procedures

Finally, pilots of travel inventories are traditionally conducted within the limits of short time periods and intentionally without the benefits of such corrective techniques as sample monitoring or redirection of sampling effort. Also, they are conducted without benefit of such corrective procedures as refusal conversion techniques, which require recontacts over an extended period of several weeks to be effective. The objective of a pilot is to expose those aspects of the data collection process that will require the most attention and the most detailed corrective recommendations and strategies.

C. Task Element Evaluation

1. Public Awareness Plan

Description
The Draft Public Awareness Plan developed by Brogan & Partners and approved by MDOT included as elements: a functional website with information about the project, devising an MDOT-approved project name (MI Travel Counts), legislative and non-legislative MI Travel Counts notification letters approved by MDOT, compilation of agency, local government, and news media mailing lists, initial agency notification letter mailings, press releases finalized by MDOT, preparation of long-lead publications for project kickoff, pending MDOT approval, and investigation into placement of Public Service Announcements written by MDOT.

Pilot Execution Successes or Difficulties
Once approved by MDOT, the Public Awareness Plan, including a fully-functional website, legislative notification and non-legislative notification letters to local planning agencies, and press releases by MDOT, was implemented smoothly. Website feedback is separately reported in element 2. Two very positive brief television news segments aired in the Detroit and Lansing metropolitan areas, which described the project and encouraged those contacted to participate. No negative news publicity was encountered. As a part of the Pilot, there were no citizen or state or local government responses received outside of website hits and calls to the MI Travel Counts 1-800 number.

Solutions/Recommendations
No changes in the Public Awareness Plan are recommended. The Public Awareness Plan should proceed as outlined in the Plan.

2. Toll-Free Information Number

Description
MORPACE International, Inc. has set-up a dedicated toll-free number, 1-800-566-6262, at MORPACE's Phone Center for the duration of the project. This number is published in the pre-notification letter and in the mailing to each recruited household (both in the cover letter and on each diary). The number is staffed during business hours and an answering machine greeting is heard at other times.

Pilot Execution Successes or Difficulties
During the Pilot, no technical or coverage difficulties were experienced with the 1-800 number. Calls made to the 1-800 number at MORPACE were for purposes of verifying the study, to arrange an appointment for the retrieval interview, to request to mailback completed diaries, or to report that they had decided not to participate in the study. A few households called who received diary materials and then decided not to participate. Some respondents, even those completing the project, reported that they felt they should get paid for completing the diaries. No other complaints were received. Few calls were received after the Pilot was completed on February 10, 2004. Respondents were directed to mailback the completed diaries after the pilot “cut” date.

Solutions/Recommendations
As a result of the Pilot, no changes are recommended to the toll-free number protocol.

3. Functional Website

Description
Brogan & Partners, with MDOT assistance and approval, has developed a project website at www.michigan.gov/mitravelcounts. This website was fully operational for the Pilot and consists of six segments: Introduction, Please Participate, Program Benefits, Media FAQs, Contact Us, and Program Privacy.

Pilot Execution Successes or Difficulties
For the month of January, there were 1,230 page views of the MI Travel Counts website (275 for the front page and 955 total for inside pages) with 128 visits. These statistics include MDOT, MORPACE, subconsultants, e-Michigan staff, and others with a reviewing function.

For the month of February, the statistics are for page views 634 (total) with 180 (home page) and 454 (inside pages), for a total of 138 visits. There were no technical problems with the website and all comments received by participants and other observers were very positive as to its presentation and content.

Solutions/Recommendations
No changes to the MI Travel Counts website are recommended after the Pilot. The website is considered by MORPACE to be a significant asset for encouraging participation in the study.

4. Sample Design Technical Document and Procedures

Description
The Sample Design Technical Document calls for equal sampling across the seven sampling areas with proportional sampling according to 2000 PUMA data for three key household variables: household size (1, 2, 3, and 4+), number of vehicles (0, 1, 2, and 3+), and number of workers (0, 1, 2, 3+) within sampling areas.

For the Pilot, the City of Detroit was given special consideration since MORPACE's previous travel inventory experience has shown that lower response rates from urban areas can be a concern. To test this concern, the targeted Pilot completed sample households were increased from 105 (15 per sampling area) to 120 to accommodate a targeted additional 15 completed households within the City of Detroit. The Pilot random-digit-dial (RDD) sampling plan was adjusted to accommodate this test.

Originally, a total of 7,600 RDD records were ordered from Marketing Systems Group's (MSG) GENESYS Sampling System. These 7,600 records (950 per sampling area) passed through GENESYS' ID Plus, an enhanced screening service, to identify and purge non-working and government/business numbers from RDD samples. This screening reduces data collection costs. Of these 950 records per sampling area, the ID Plus system screened to a total of 4,539 records with assigned residential numbers, broken down by sampling area as follows:

Sampling Area 1:	SEMCOG outside the City of Detroit	557	59%
	City of Detroit	512	54%
Sampling Area 2:	Small Cities	593	62%
Sampling Area 3:	Upper Peninsula Rural	586	62%
Sampling Area 4:	Northern Lower Peninsula Rural	517	54%
Sampling Area 5:	Southern Lower Peninsula Rural	658	69%
Sampling Area 6:	TMAs	558	59%
Sampling Area 7:	Small Urban-Modeled Areas	558	59%
		4539	60%

Screening yields varied from 54% of ordered numbers within the City of Detroit and for Northern Lower Peninsula Rural (4) to 69% for Southern Lower Peninsula Rural (5). Acxiom Corporation then appended address information to the sample numbers for 61% of the sample with the highest address matching in Sampling Area 4: Northern Lower Peninsula Rural (69%) and Sampling Area 5: Southern Lower Peninsula Rural (67%) and the lowest address match rate in Sampling Area 3: Upper Peninsula Rural (51%).

Only 1,960 sample household numbers were actually released for the Pilot. In all, 230 households were recruited for the pilot and 126 households completed the program (54.8%).

Pilot Execution Successes or Difficulties

Response Rates

MI Travel Counts uses a two-stage interviewing process: (1) recruit households from an RDD sample, and (2) retrieve information from all members of the recruited household. The two response rates are determined separately and are called, respectively, the recruit response rate and the participation rate.

Recruit Response Rate

For the Pilot, the CATI system recorded a disposition (or outcome) for each of the 1,960 phone numbers in the pilot sample. Call attempts yielded three types of dispositions: (1) eligible, (2) ineligible, and (3) unknown eligibility. Subcategories for each of these dispositions are shown below in Table 1.

Table 1. Recruit Sample Dispositions: MI Travel Counts Pilot

Sample Category	Frequency	Percent
Eligible	***370***	***19%***
Completed Recruit Interviews	230	12%
Refused	131	7%
Terminated Mid-Interview	5	0%
Language Barrier/Deaf	4	0%
Ineligible	***410***	***21%***
Geographic Quota reached	22	1%
Disconnected/Changed/New Number	239	12%
Fax Machine/Data Line	95	5%
Wrong/Business Number	54	3%
Unknown	***1,180***	***60%***
No Answer/Busy	546	28%
Answering Machine	280	14%
Soft Refusal – Terminated Before Introduction	117	6%
Scheduled for Callback	237	12%
Total Sample	**1,960**	**100%**

The sample classified as unknown eligibility is mostly households, or perhaps some small businesses or organizations, that are just not picking up the phone. The exact outcome for this portion of the sample is unknown. However, we assume from our experience with numbers reached that 47.4% of the known sample is eligible (370 / 780 = 47.4%). Thus, overall we assume that 47.4% of the unknown eligibility sample is eligible (0.474 x 1180 = 560). Adding this to the known eligible sample (370), we assume there are 930 eligible numbers (370 + 560 = 930). In calculating a recruit response rate, 25% of all assumed eligible households were recruited (230 / 930 = 24.73%).

It should be noted that in regard to Pilot response rate calculations, the Pilot was conducted over a very short time-frame, possibly resulting in inflated eligible/refusal rates since no refusal recalls/conversion attempts were made. Likewise, the unknown eligibility rate may be inflated because of the high percent of scheduled callbacks that could have been converted to completes, given a longer time period for data collection.

In regard to pilot recruit response rates, an alternative "Westat approach" could be applied. This approach includes numbers that were screened out by GENESYS as ineligible numbers. Using this approach, initial eligible numbers for the Pilot recruit would remain the same at 370, while ineligible numbers would increase to 3,471 (410 + 3,061). Thus the percent of eligible numbers as a percent of eligible plus ineligible numbers would be 10.7% (370 / 3,471). The number of unknown eligible numbers (1,180) assumed then to be eligible would be 126 (0.107 x 1180 = 126), with total eligible equal to 496 (126 + 370). Thus, using this approach, the Pilot recruit response rate would be considered to be 46.4% (230 / 496).

A third approach to response rates is based on the American Association for Public Opinion Research's (AAPOR) standard definitions. AAPOR's Response Rate 3 (RR3) estimates what proportion of cases of

unknown eligibility are actually eligible. As recommended by Peter Stopher, the assumption that 20% of unknown eligibility cases are actually eligible will be used. Using this approach, we assume that 20% of the unknown eligibility sample is eligible (0.20 x 1180 = 236). Adding this to the known eligible sample (370), we assume there are 606 eligible numbers (370 + 236 = 606). In calculating a recruit response rate, 38% of all assumed eligible households were recruited (230 / 606 = 37.95%).

Participation Rate

The participation rate for the pilot was 126 households or 54.8%. This is the percent of households where all members completed the retrieval interview (126 / 230 = 54.8%).

Representativeness of Households Completing the Pilot

Overall, 126 households completed the entire study. Table 2 on the next page shows the distribution of the characteristics of these households.

Comparing the characteristics of households that completed the Pilot with (1) sample design (2000 PUMA data for number of persons, number of vehicles, and number of workers in households) and (2) Census 2000 data (1999 data for household income), the results are as follows:

- The proportion of completes within the City of Detroit was significantly below target. Twenty (20) Detroit households were recruited but only six (6) or 30% completed travel information for all members of their household.

- Two-person households were over-represented and four+-person households were under-represented.

- Zero-vehicle households were slightly under-represented and three+-vehicle households were over-represented.

- Zero-worker households were slightly over-represented while 3+-worker households were slightly under-represented.

- Overall, the Pilot was representative by household income with only slight under-representation of the lowest and highest income categories.

CATI generated tallies for the Pilot recruit and completed household samples by data cells and household income (including statewide and sampling area totals) are attached as Appendix A: Pilot CATI Sample Tallies.

Table 2. Characteristics of Completed Households: MI Travel Counts Pilot

Characteristic	Frequency	Percent	Goal as Set by Sample Design/2000 PUMA Data
Sampling Area			
1 SEMCOG outside Detroit	18	14.3%	12.5%
City of Detroit	6	4.8%	12.5%
2 Small Cities	15	11.9%	12.5%
3 Upper Peninsula Rural	19	15.1%	12.5%
4 Northern Lower Peninsula	14	11.1%	12.5%
5 Southern Lower Peninsula	20	15.8%	12.5%
6 TMAs	19	15.1%	12.5%
7 Small Urban-Modeled Areas	15	11.9%	12.5%
Household Size			
1 person	31	25%	26%
2 persons	60	48%	34%
3 persons	17	13%	16%
4+ persons	18	14%	24%
Number of Vehicles			
0 vehicles	4	3%	7%
1 vehicle	38	30%	38%
2 vehicles	52	41%	41%
3+ vehicles	32	25%	14%
Number of Workers			
0 workers	41	33%	25%
1 worker	34	27%	33%
2 workers	46	37%	35%
3+ workers	5	4%	7%
Household Income			
<$10,000	5	4%	8%
$10,000 to $49,999	65	52%	47%
$50,000 to $74,999	19	15%	20%
$75,000 to $99,999	21	17%	12%
$100,000+	11	9%	13%
Below $50,000	1	1%	
$50,000 or Above	1	1%	
Refused	3	2%	
Total	**126**	**100%**	

Solutions/Recommendations

1. Sample screening and address matching: Pilot experience shows that for the most efficient allocation of data collection resources it may be advisable to order:

   - Less sampling RDD numbers for the Southern Lower Peninsula Rural Sampling Area since this area has both a low screen-out percent for non-working/business numbers and a high address matching rate.
   - More sampling RDD numbers for the City of Detroit since it has a high screen-out percent for non-working/business numbers and an average address matching rate.
   - More sampling RDD numbers for the Upper Peninsula Rural Sampling Area since it has an average screen-out percent for non-working/business numbers and a low address matching rate (possibly due to RDF and fire code addresses).

2. The Pilot response rates are adequate to very good. For the National Household Travel Survey (NHTS), the federal Office of Management and Budget required a minimum recruit response rate of 30%, using any of the three calculation approaches described. This goal should be fully attainable for MI Travel Counts with full implementation of refusal conversion techniques and scheduled callbacks over a longer time period. No changes to sampling design or processes are considered necessary to improve response rates.

3. The Pilot participation rate of 55% is well above the 50% expected average rate obtained by other travel inventories conducted within recent years. Again, no changes are recommended. MORPACE anticipates equaling or raising the participation rate by offering an Internet retrieval option during the full project. At a minimum, respondent burden should be reduced as more options are offered.

4. Achieving the representativeness of the sample: The full project will require close, real-time monitoring to achieve Census proportionality by in-area geographic area, household size, number of household vehicles, number of workers, and household income. If left unmonitored, smaller households are more likely to complete the project, while larger households are less likely. Zero vehicle households are less likely to complete the interview, as are lower income households. Corrective actions in the form of a higher number of callbacks to households in difficult to fill data cells, rescheduling of underrepresented recruited households, and increased or targeted sampling frames will most likely be required.

5. Data Collection Methodology Plan

Description
The contract proposal and Data Collection Methodology Report outline the full rationale and procedures for MI Travel Counts.

Pilot Execution Successes and Difficulties
All general procedures for MI Travel Counts functioned smoothly with no major Pilot glitches and with only minor difficulties experienced with both instruments and procedures.

Solutions and Recommendations
No recommendations for changes in the Data Collection Methodology Plan are considered necessary as a result of the Pilot.

6. Pre-Notification Letter

Description
The purpose of the pre-notification letter is to provide a “heads-up” in regard to the recruitment call from MORPACE and to establish the authenticity and importance of the project from a community perspective.

Pilot Execution Successes and Difficulties
A pre-notification letter was sent to the 2,770 households with an address match on January 22, 2004. The pre-notification letter explained the purpose of the project, the random process for selection of households, and that an interviewer may be calling to recruit the household for participation. Additionally, the pre-notification letter provided the MI Travel Counts website address for information and a toll-free phone number for questions. Gloria Jeff, the MDOT Director, signed the pre-notification letter. The letters were addressed to “Current Resident”, so that the U.S. Postal Service would not forward letters to residents who have moved out of the study area. No incentive was included with the letter. Of the 2,770 letters sent, 398 were returned as undeliverable (14.4%). Reasons for non-delivery typically include insufficient address information, vacant residence, and no such street or number.

No complaints or specific questions were received in regard to the pre-notification letter. The pre-notification letter significantly increased the participation of households in the project as over 90% of recruited respondents were from those households who received the letter.

Solutions/Recommendations
The pre-notification letter mailing process went smoothly and significantly increased participation in the project. No changes to the process are recommended. Only minor change recommendations have been made and approved by MDOT in regard to wording of the pre-notification letter to simplify language. These include removing the phrase "directly correlates". The MDOT project director's number was also changed to reflect a new system whereby callers will hear a recorded message about the legitimacy and purpose of MI Travel Counts and be encouraged to leave a message to receive a callback if they have further questions. The MI Travel Counts logo has been moved to the signature line so as not to diminish the importance of the official Michigan Department of Transportation masthead logo at the top. A copy of the MDOT approved revised pre-notification letter is provided as Appendix B.

7. Recruit Instrument and Computer Assisted Telephone Interview (CATI) recruit script and system

Description
Each household received up to four recruit attempts. Telephone calls were made to these numbers by MORPACE interviewers between the hours of 6:00 pm and 9:00 pm Eastern Standard Time between January 26th and January 28th of 2004. The draft recruit interview script was used. MORPACE interviewers identified themselves and asked to speak with a household member at least 18 years of age. The interviewer then briefly introduced the MI Travel Counts study, emphasized its importance and the need to obtain travel data for all household members, and assured the respondent that all information is confidential and for research purposes only. In the recruit interview, information about the household size and membership, the number of vehicles available to the household, the number of workers, and the household's income was collected along with other information. The interviewer confirmed or collected the household's street address and other geographic information needed to assign the household to a sampling area and to geocode home address, including city, county, and township where applicable. The household's agreement to participate in the study was confirmed and the household was then assigned a 48-hour travel period: February 2nd/Feburary 3rd, February 3rd/February 4th, or February 4th/February 5th. The interviewer explained that travel diaries and instructions would be mailed to the household by priority mail and that MORPACE would call back within a few days after their travel period to retrieve the information for each household member by phone. Finally the household was asked if they would have any overnight visitors during the assigned travel period, and if so, relevant information was collected for these visitors.

Pilot Execution Successes and Difficulties
All interviewing was completed at MORPACE's Ryan Telephone Center, which is in Sterling Heights, Michigan. The average recruit interview took 9.4 minutes. The interviewing went smoothly and when interviewers were debriefed the only concern they expressed was whether all respondents understood the term "transit pass". Both MDOT and MORPACE project representatives monitored the recruit interviewing on site and MORPACE continued to monitor remotely.

MDOT monitors noted the need to add the word "NEAREST" to the interviewer note for obtaining home address cross streets. A respondent on the second interviewing night was unsure as to whether to include their 15-year old daughter as a worker since she was employed a few hours per week at a nominal job.

During the post-processing of data, difficulties with assigning a few households to the correct sampling area were discovered, based on their varying responses when asked first "What is your city?", then "Are you inside or outside this city?", followed by (IF OUTSIDE) "What is your township?".

During the post Pilot meeting with MDOT on February 26, 2004 it was decided that the word "currently" should be added to the questions: "Are you **currently** employed?" and "Including yourself, how many of the people, over 15 years of age, living in your household are **currently** employed?" As requested by MDOT, MORPACE will change the phrase "over 15 years of age" to "16 years of age or older" for the full survey.

Finally, MORPACE recommends asking for age outright instead of having the interviewer read age categories to save interviewing time. Ages would be post-processed to categories.

Solutions/Recommendations
The Pilot interviewing length of just under 10 minutes is considered somewhat long but acceptable, since the length of phone recruits for travel inventories on average is six to ten minutes.

CHANGES MADE AFTER DEBRIEFING THE INTERVIEWERS AND MONITORING THE FIRST NIGHT. THE FOLLOWING CHANGES TO THE RECRUIT INSTRUMENT WERE MADE ON JANUARY 27, 2004 – AFTER THE FIRST NIGHT OF RECRUITING:

INTRO
Moved the age question to the end of the first paragraph for efficiency:

Hello, my name is <INSERT INTERVIEWER'S FIRST NAME> calling on behalf of the Michigan Department of Transportation. MDOT is conducting a transportation study to better understand the daily travel characteristics of Michigan residents. **Are you a member of this household and at least 18 years old?**

(CONTINUE WITH HOUSEHOLD MEMBER AT LEAST 18 YEARS OF AGE)
This is an official MDOT study and the information collected is confidential and secure. This is not a sales call and no sales calls will result from this interview. For quality control purposes, this call may be monitored.

TPASS_1
TPASS_#
Added "bus or":
TPASS_1.
Do you have a **bus or** transit pass?
TPASS_#.
Does <INSERT NAME_#> have a **bus or** transit pass?

PTYPE_1
PTYPE_#
Added "bus or":
PTYPE_1.
What **bus or** transit pass do you have? Any others?
PTYPE_#.
What **bus or** transit pass does <INSERT NAME_#> have? Any others?

MAILXSTS
Added "nearest" to note:
(RECORD TWO **NEAREST** CROSS STREETS)

HOMEXSTS
Added "nearest" to note:
(RECORD TWO **NEAREST** CROSS STREETS)

CHANGED ON JANUARY 28, 2004 – AFTER THE SECOND NIGHT OF RECRUITING:

WRKRS2
Added text to the question:
Including yourself, how many of the people**, over 15 years of age,** living in your household are employed?

CHANGES RECOMMENDED AS A RESULT OF THE PILOT: (See Appendix C for a full listing of Instrument Changes)

Delete AREA_CIT and AREA_TWP
Create new variable – AREA_CTW
Combining the above two questions into one new question should eliminate potential confusion for the respondent when reporting their city or township for sampling area identification purposes. Note that the pre-logic for AREA_CIT will now be used for AREA_CTW. Also, as an interviewer assist, the words "city" and "township" will be capitalized if the name is used for both a city and township (e.g., Buchanan). Spelling errors have been corrected – Filmore is now Fil**l**more and Penisula is now Peni**n**sula. Finally, because the list is now quite lengthy, the CATI will not list each name. A separate answer list for this question will be provided in the Interviewer Guidebook.

AREA_LIM
As a result of combining the city and township questions, the pre-logic will be updated for the AREA_LIM question.
(ASK IF AREA_CTW=2, 3, 5, 6, 7, 9, 11, 13, 17, 18, 20, 22, 23, 26, 27, 29, 33, 34, 40, 41, 44, 45, 46, 47, 50, 52, 53, 54, 55, 56, 58, 62, 66, 67, 68, 69, 70, 73, 74, 76, 78, 80, 81, 86, 90, 93, 95, 97, 98, 100, 101, 103, 104, 105, 108, 109, 110, 113, OR 115)

AREA_TM
As a result of other changes, the pre-logic will be updated for the AREA_TM question.
AREA_CIT>997 will be changed to AREA_C**TW**>997
AREA_TWP>997 will be deleted
(ASK IF AREA_ST=2 OR AREA_CTY>995 OR AREA_CTW>997 OR AREA_LIM>997)

WRKRS1
To avoid respondent confusion, the word "currently" should be added to the question.
Are you **currently** employed?

WRKRS2
Again, to avoid respondent confusion, the word "currently" should be added to the question.
Including yourself, how many of the people, over 15 years of age, living in your household are **currently** employed?

As requested, changing text in the question:
Including yourself, how many of the people**, 16 years of age or older,** living in your household are **currently** employed?

New variable – SAGE_1, SAGE_#
When asked "What is your age?", most respondents respond with a specific answer, such as 52 years old. Properly categorizing the respondent's answer to a category can slow down the interview. Also, if more than one household member has the same name or initials, MORPACE routinely adds age to the diary label, to avoid confusion (e.g., Bob (52 years old) and Bob (12 years old)). Therefore, MORPACE recommends recording the specific age and post-coding the age to the age range categories.

SAGE_1.
What is your age?
SAGE_#.
What is <INSERT NAME_#>'s age?
(RECORD AGE)

__ __ __ (PROGRAMMER: Allow 0 to 115.)
998 Don't Know
999 Refused

AGE_1
AGE_#
If a respondent doesn't know a household member's exact age or is unwilling to provide the exact age, the age range categories will be used. Therefore, the pre-logic for these questions will be updated.
(ASK IF SAGE_#=998 OR 999)

Also, the text of the question will be changed as follows:
AGE_1.
Which of the following categories best describes your age?
AGE_#.
Which of the following categories best describes <INSERT NAME_#>'s age?

Finally, the interviewer note ((DO NOT READ LIST. PROMPT, IF NEEDED.)) will be deleted.

LDRV_#
Because of the age changes, the pre-logic for this question needs to be updated.
(ASK IF (SAGE_#>15 AND SAGE_#<116) OR (AGE_#>2 AND AGE_#<12) OR AGE18_# <>2)

EDU_#
Because of the age changes, the pre-logic for this question needs to be updated.
(ASK IF (SAGE_#>17 AND SAGE_#<116) OR (AGE_#>3 AND AGE_#<12) OR AGE18_# <>2)

WRKR_#
Because of the age changes, the pre-logic for this question needs to be updated.
(ASK IF (SAGE_#>15 AND SAGE_#<116) OR (AGE_#>2 AND AGE_#<12) OR AGE18_# <>2)

New variable –SVAGE_#
For the same reasons cited for SAGE, MORPACE recommends recording the specific age of visitors and post-coding the age to the age range categories.
SVAGE_#.
What is <INSERT NAME_#>'s age?
(RECORD AGE)

__ __ __ (PROGRAMMER: Allow 0 to 115.)
998 Don't Know
999 Refused

VAGE_#
If a respondent doesn't know a visitor's exact age or is unwilling to provide the exact age, the age range categories will be used. Therefore, the pre-logic for these questions will be updated.
(ASK IF SVAGE_#=998 OR 999)

Also, the text of the question will be changed as follows:
Which of the following categories best describes <INSERT NAME_#>'s age?

Finally, the interviewer note ((DO NOT READ LIST. PROMPT, IF NEEDED.)) will be deleted.

VWRKR_#
Because of the age changes, the pre-logic for this question needs to be updated.
(ASK IF (SVAGE_#>15 AND SVAGE_#<116) OR (VAGE_#>2 AND VAGE_#<12) OR VAGE18_# <>2)

Sampling Area Assignment
Due to combining and changing the questions that determine which sampling area the household is located in, the programmer notes for assigning each household to a sampling area need to be updated.

As shown in section 15 of this report, persons 65 years and older are over represented in the Pilot. Therefore, monitoring by age within sampling area using 2000 Census based percentages will be important. When percentages in the sample reach Census proportions, the following question will be added to the beginning of the recruit interview after the question "Are you 18 years old or older?": "Is anyone in your household under age 65?" If not, the household will be terminated. The interviewer will state: "Thank you for your willingness to participate but we already have completed sufficient interviews with persons in your age category. May we call you back if we find we need your travel information for MI Travel Counts?"

Additional detailing of these changes proposed for the recruit instrument is provided as Appendix C.

8. Diary Cover Letter

Description
MORPACE staff prepared a package of materials for each recruited household. The package was sent via U.S. Priority Mail and consisted of the following items:

- Personalized diary cover letter
- Personalized diary for each household member and any visitors, with example included
- Person Information Sheet for each household member including school and work questions and address information, with a section for recording long distance trips over 100 miles taken within the past three months
- Business reply envelope (postage-paid)
- Official Department of Transportation Michigan Map

Prior to the Pilot mailing, each address was checked for accuracy and completeness, using the U.S. Postal Service's website. One package was returned with a handwritten note on the envelope: "Return to Sender – Don't Want". This six-person Detroit household opened the package and removed the State of Michigan map before returning the mailing.

Pilot Execution Successes or Difficulties
During the Pilot, no households needed to be recontacted for additional information or clarification of their mailing address. The diary cover letter was signed by Gloria Jeff, MDOT Director and contained the website address, the MI Travel Counts 1-800 number, and the number for the MDOT project director. No comments were received regarding the content or format of the diary cover letter.

Solutions/Recommendations
In the diary cover letter, the word "statistical" has been taken out and the rest of the sentence has been modified as follows: "The information you provide will only be used for the statistical purposes of this study. It will be kept **confidential** and **secure**." The MDOT project director's phone number has been revised. A copy of the revised diary cover letter is provided as Appendix D.

9. Diary

Description
Prior to the Pilot, MDOT, MORPACE, PB, Peter Stopher, and Richard Nellett devoted extensive time to the design of the MI Travel Counts place-based activity diary. This diary is used by respondents to record all of the required travel information for their assigned 48-hour travel period. Extensive effort pre-Pilot was devoted to making the format, flow, and content of the diary clear and flawless, with reduced respondent burden.

Pilot Execution Successes and Difficulties
No comments, calls, or complaints were received in regard to the diary instrument with the exception that in-house MORPACE staff noted that the repeating of "Start Here" titles on the diary start page was confusing. A review of the 50 diaries received by mail strongly indicates that respondents fully understood the instructions, content, format, and flow. No respondents recorded as many locations (trips)

as were allowed for in the 48-hour diary format. Respondents completing diaries by mail did not have to be called back for missing information. In regard to mode choice within the diary, Parsons Brinckerhoff has clarified that modeling requirements dictate that mopeds be grouped with motorcycles rather than bicycles.

Solutions/Recommendations
The following changes in the diary are recommended by MORPACE as a result of the Pilot:

Activity Choices
On page 2 of the diary, the work category will have an explanation added:
3 Work (employment and job-related activities)

Start Page
The "Start Recording Here" note will be deleted.
The "Start Here" in the black box will be changed to "Start **Recording** Here".

Type of Transportation
As per modeling requirement clarifications from PB, a global change will be made: Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.
2 Motorcycle**/Moped**
3 **Bicycle**

Global change: "If you used a car/van/truck or motorcycle for this trip …" will be changed to "If you used a car/van/truck or motorcycle**/moped** for this trip …"

Question 3 Font
The font used for "$__ __. __ __" does not match. The font will be corrected for the final printing.

Other minor changes were made in the bulleted instructions on page1 of the diary.

10. Person Information Sheet

Description
The purpose of the Person Information Sheet is to let each member of the household know what personal information is required of them in order for their retrieval interview to be complete. The information includes school and work status and addresses as appropriate, questions about work flexibility and industry, and a section on long distance trips taken over the previous three-month period. The Person Information Sheet provides all the allowable categories of response to each question, so the respondent is prepared to respond appropriately when an interviewer calls to retrieve the data. Additionally, the Person Information Sheet is to be returned with each household member's mailed diary.

Pilot Execution Successes and Difficulties
No complaints, questions, or comments were received in regard to the Person Information Sheet. Evidence from mailed in person information sheets shows that respondents understood that this sheet must be returned completed for every member of the household along with each member's completed diary. Respondents fully understood the instructions, content, format, and flow.

Solutions/Recommendations

Work Schedule
It was decided at the February 26th project meeting that the first answer category should be changed to the following:
"I have no flexibility in my work schedule."

In line with PB modeling requirement recommendations, the following change will be made:

Travel Codes
Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.
2 Motorcycle/**Moped**
3 **Bicycle**

School Status
Changed to: (Are you/Is NAME) currently attending **any level of** school?

Industry
For clarity, changing the question to the following:
What is (your/NAME's) employer's industry?

(See Appendix C for a full listing of changes in the Person Information Sheet)

11. Reminder Script

Description
Each recruited household is called the day before their assigned travel day. The household is reminded of the project and its importance and asked to record all locations visited. If an answering machine is reached, a reminder message is left for the household.

Pilot Execution Successes and Difficulties
Reminder calls were made on January 31st, February 2nd, and February 3rd. (Please note that the reminder calls for the travel period of February 2nd/February 3rd were made on Saturday, January 31st instead of Sunday, February 1st because of "Superbowl Sunday".) The average reminder call length was 1.1 minute. No complaints, comments, or calls were received in regard to reminder calls.

Solutions/Recommendations
No changes are recommended to the reminder call script.

12. Data Retrieval Instrument and CATI retrieval script and system

Description
Calls were made to the 230 recruited households beginning on the day after the travel period. The interviewer asked to speak to the contact person for the household and determined if all household members had completed their diaries or were able to provide the information from memory. The interviewer first asked a few questions about school and work, before recording the travel information for the 48-hour period. The contact person was also asked to confirm the number of overnight visitors indicated in the recruit interview. Overnight guests were added and/or removed as necessary. After completing the interview with the first person, the interviewer asked for the second person, and so on, until all household members were interviewed. Proxy interviews were accepted for children less than 16 years of age, and for those household members for whom callbacks could not be arranged.

If the time was inconvenient, a different time was scheduled to retrieve the information. If the time was inconvenient for some of the household members, information was retrieved from those available at the time and a callback was scheduled for those currently unavailable.

Pilot Execution Successes and Difficulties
Pilot retrieval interviews took place between February 4th and February 10th of 2004. The average length of the retrieval interview was 13.7 minutes per person. (Therefore, a household with three members took an average of 41.1 minutes to complete.)

Throughout the Pilot, supervisors monitored the interviews via MORPACE's customized CATI monitoring system. This monitoring system was also available to MORPACE project staff, PB, and MDOT. MDOT representatives, MORPACE, PB, and Richard Nellett monitored pilot interviews on site and remotely and

watched CATI pilot questionnaires on-screen as they were being completed, using a modem and standard software.

During the Pilot, interviewers were strongly encouraged to point out problems with questions and asked to identify awkward or confusing wording. The MORPACE project director conducted a debriefing session with the interviewers. Interviewers pointed out that the times for trips that a previous respondent reported taking with another household member did not come up with the other trip information provided for the accompanying member's retrieval interview. This problem has been corrected in the revised retrieval CATI system.

Solutions/Recommendations
The length of the retrieval interview per person and per household is at the outside limits of average lengths for household travel inventories, but there were less than five mid-interview household terminates. Offering mailback and Internet options for data retrieval are essential to reducing respondent burden, especially for 3+ person households.

CHANGED ON FEBRUARY 5, 2004 – AFTER THE FIRST NIGHT OF RECRUITING. CHANGES MADE AFTER DEBRIEFING THE INTERVIEWERS AND MONITORING THE FIRST NIGHT.

DDONE_#
Added text to the answers for clarity:
01 Yes **- NO MORE TRAVEL**
02 No **- CONTINUE RECORDING TRAVEL**

AHOUR_#
Deleted the "at this location" at the end of the question:
What time did (you/NAME) ARRIVE?

Additional Cities
Added the following cities (to the CATI and to the interviewer guidebooks):
1012 Hell **
1013 Croton **
**Do NOT use for MAILCITY!! Not acceptable for mailing!!
1012 should be between 426 (Hazel Park) and 427 (Hemlock)
1013 should be between 228 (Croswell) and 229 (Crystal)

CHANGES RECOMMENDED AS A RESULT OF THE PILOT. (See Appendix C for detailed list of Instrument Changes).

S_STATUS
Adding text to the question and an interviewer note:
(Are you/Is NAME) currently attending **any level of** school?
(INTERVIEWER NOTE: From preschool/nursery school to college.)

W1_FLEX
W2_FLEX
To match the updated person information sheet, the first answer category should be changed to the following:
1 "I have no flexibility in **my work schedule**."

W1_IND
W2_IND
For clarity, changing the question to the following:
What is (your/NAME's) employer's industry?

Also adding the following interviewer note:
(IF NEEDED: By industry, we mean the employer's principal business or activity.)

VIS_INT
The pre-logic should be updated, so that only those visitors of driving age are asked the question.
(ASK IF VISITOR AND ((SVAGE_#>15 AND SVAGE_#<116) OR (VAGE_#>2 AND VAGE_#<12) OR (VAGE18_#<>2))

TRS_TYPE_#
Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.
002 2 Motorcycle**/Moped**
003 3 **Bicycle**

New variable – DAR_#
(ASK IF TRS_TYPE_#=7)
DAR_#.
Which DIAL-A-RIDE provider did (you/NAME) ride?
(RECORD NUMBER FOR BUS PROVIDER FROM TRANSIT LIST)
(RECORD 996 FOR OTHER SPECIFY)
(DO NOT READ LIST. IF NEEDED, PROMPT WITH CATEGORIES.)
996 Other (Specify _____)
998 Don't Know
999 Refused

BUS_#
Change pre-logic:
(ASK IF TRS_TYPE_#=9)

Add "bus" to the question:
Which **BUS** provider did (you/NAME) ride?

PAY1_#
Change pre-logic:
(ASK IF TRS_TYPE_#=6)

Change "this trip" to "the taxi or shuttle":
How much, in total, did (you/NAME) pay for **the TAXI or SHUTTLE**?
Rename PAY1_#, PAY2A_#, PAY2B_#
Use PAY6_#, PAY6A_#, PAY6B_#
PAY6A_# pre-logic will be: (ASK IF PAY6_#=2)
PAY6B_# pre-logic will be: (ASK IF PAY6_#=2)
PAY6A_# and PAY6B_#

Change "transportation" to "taxi/shuttle":
(RECORD **TAXI/SHUTTLE** COST - DOLLARS)
(RECORD **TAXI/SHUTTLE** COST - CENTS)

Create PAY7_#, PAY7A_#, PAY7B_#
Create PAY8_#, PAY8A_#, PAY8B_#
Create PAY9_#, PAY9A_#, PAY9B_#
Base text on 6 series, but change as follows:

PAY7_#
How much, in total, did (you/NAME) pay for **the DIAL-A-RIDE service**?
PAY7A_#
(RECORD **DIAL-A-RIDE** COST - DOLLARS)

PAY7B_#
(RECORD **DIAL-A-RIDE** COST - CENTS)

PAY8_#
How much, in total, did (you/NAME) pay for **the TRAIN**?
PAY8A_#
(RECORD **TRAIN** COST - DOLLARS)

PAY8B_#
(RECORD **TRAIN** COST - CENTS)

PAY9_#
How much, in total, did (you/NAME) pay for **the BUS, (or did you use your transit pass)**?
PAY9A_#
(RECORD USED TRANSIT PASS)
(RECORD **BUS** COST - DOLLARS)
PAY9B_#
(RECORD **BUS** COST - CENTS)

PAY6A_#
PAY7A_#
PAY8A_#
PAY9A_#
(PROGRAMMER: Allow 0 to 900**0**.)

PK2A_#
(PROGRAMMER: Allow 0 to 900**0**.)

ASTOP_#
Deleting this question, per discussions at the project meeting on February 26th.

FCTY_#
At MDOT's request, adding an additional interviewer note:
(INTERVIEWER NOTE: For international trips, enter the name of the country in this field.
If trip to Canada, please probe for City and Province (Toronto, Ontario, Canada).
If respondent provides a place, like Disney World, and is unable to provide city when probed, enter the place provided in this field.)

TRTYPE_#
Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.
002 Motorcycle**/Moped**
003 **Bicycle**

FMODE_#
Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.
002 Motorcycle**/Moped**
003 **Bicycle**

The CATI retrieval script was revised so that times for trips that a previous respondent reported taking with another household member come up in the accompanying member's retrieval interview.

13. Interviewer Training Manual

Description
The Interviewer Training Manual consisted of a loose-leaf large notebook that contains MORPACE's standard interviewer guidebook, specific project information taken from the MI Travel Counts website, and

a copy of all materials including the pre-notification letter and envelope, recruit instrument, priority mailing envelope example, diary cover letter, diary, person information sheet, the Michigan map used as an incentive, reminder script, and retrieval instrument. In addition, all project forms and city/township lists were included.

Pilot Execution Successes and Difficulties
Interviewer training consisted of two oral briefings (January 26, 2004 for the recruit interview and February 4, 2004 for the retrieval interview). Topics covered included the project background, expectations, possible problems, and questions. MDOT representatives were present at both interviewer-training sessions. The MI Travel Counts Interviewer Training Manual guided the sessions. Interviewers went over each CATI instrument with the phone room supervisor and project director. Practice interviews were conducted using CATI in test mode.

Solutions/Recommendations
All changes made to project instruments and materials will be made to and updated in the MI Travel Counts Interviewer Training Manual. A handout will be added to the Interviewer Guidebook with additional information on the activity codes.

14. Data Coding Structure

Description
Household, person, trip, and long distance files were created from the raw CATI output and variable codelists were developed as a part of the Data Coding and Quality Control Manual. (Visitor person and trip files were not created for the Pilot, as no households that completed the retrieval had an overnight visitor.)

Pilot Execution Successes and Difficulties
Data results were reviewed and edited, according to procedures established in the MI Travel Counts Data Coding and Quality Control Manual. Post Pilot, separate variable code lists were constructed for household, person, trip, long distance, visitor person, and visitor trip files. These code lists include: column numbers, variable type, justification, format, variable name, response category, and response category description.

Solutions/Recommendations
As a result of MDOT review at the February 26, 2004 meeting, minor changes were made to the code lists including expansion of column width to accommodate TAZ numbers and adding fields for the originally reported location address. Complete revised variable code lists are provided in Excel file format as Appendix E to this Pilot Report.

15. Data Coding and Quality Control Manual and Procedures

Description
As part of the Data Coding and Quality Control Manual, MORPACE Post-Processing Data Checks have been developed. The document is attached as Appendix F. This list includes MORPACE benchmarks that are used to judge data quality. Finally, a List of Post-Processing Audit Checks by PB is provided as Appendix G.

Pilot Execution Successes and Difficulties
Before the first night of pilot interviewing, the CATI instruments were checked thoroughly by MORPACE researchers and programmers. Then the raw output from the CATI was thoroughly checked by MORPACE staff after the pilot. Logic and skip patterns were confirmed and answer ranges were verified.

Data processing prepares SAS (a data analysis system) data files according to specifications provided by the research department. The research department uses SAS to run the post-processing data checks (MORPACE Post-Processing Data Checks), ensuring that the information provided to PB and MDOT is

complete and accurate. PB audit checks of MORPACE data files were accomplished using the specifications as a part of the Pilot.

As presented in the Introduction to this Pilot Report, among the five criteria established to assess the results of the MI Travel Counts Pilot are the three post-processing data quality criteria of:

1. Achieving Data Consistency
2. Collecting an Appropriate Level of Data Detail
3. Accomplishing Completed Data Information Objectives

The level of detail programmed into the CATI resulted in the collection of consistent data. However, since the times collected in the interview and diary were centered on the travel information, as opposed to the location information, MORPACE was required to recollect times, even if members of the same household were traveling together. The CATI system allowed respondents to report location information only once, which helped achieve a high level of data consistency.

As shown in Table 2 on page 13, there were no missing data for households that completed the retrieval interviews for the critical variables; sampling area, household size, number of vehicles, and number of workers (see Appendix H for frequencies of summary variables). Two percent (2%) refused to reveal household income and 2% did not provide income category information other than below or above $50,000. All completed households provided full home address information.

Additionally, Table 3 on page 27 shows that missing data was not a problem for person-level data. Table 4 on page 28 shows the same result for trip-level data.

As stated, missing person data is minimal and Pilot distributions for persons on key characteristics are considered proportional to expected Census distributions, with the exception that within the Pilot sample those 65 years or older are overrepresented. This often happens in a Pilot with a short interviewing period because older persons are both more likely to be home and more likely to cooperate.

The percent of proxy interviews is considered at least acceptable by Travel Survey Standards being established internationally. These standards, as presented at the 2004 Transportation Research Board's Travel Survey Methods meeting, regard 10% or less proxied aged 18+ respondents as "excellent" and 20% or less proxied 18+ aged respondents as "good". It should be noted that 96% of those who proxied in the Pilot for a respondent 18 years or older reported that the respondent completed the diary. Of adults reporting both by self or proxy, 48 of 235 respondents 18 years or older (20.4%), stated that they were not using their diary when reporting their locations or travel.

In the main MI Travel Counts program, "other specify" and "other" responses will be post-coded into the specified question response categories. New coding categories will be added only with the approval of MDOT.

Table 3. Characteristics of Completed Persons: MI Travel Counts Pilot

Characteristic	Frequency	Percent
Gender		
Male	134	47.3%
Female	149	52.7%
Age		
Under 5	10	3.5%
5 to 15	34	12.0%
16 to 17	4	1.4%
18 to 24	10	3.5%
25 to 34	19	6.7%
35 to 44	45	15.9%
45 to 54	44	15.5%
55 to 64	52	18.4%
65 to 74	33	11.7%
75 to 84	27	9.5%
85+	3	1.1%
Don't Know/Refused	2	0.7%
Transit Pass		
Yes	7	2.5%
No	276	97.5%
Work Status		
Full-Time Worker	107	37.8%
Part-Time Worker	35	12.4%
Unpaid Volunteer/Worker	9	3.2%
Not Looking for Work	82	29.0%
Looking for Work	6	2.1%
Not Applicable (Too Young)	44	15.5%
School Status		
Not Currently a Student	230	81.3%
Pre-School/Nursery School	3	1.1%
K-12	40	14.1%
Vocational/Technical	1	0.4%
Full-Time College	6	2.1%
Part-Time College	3	1.1%
Proxy Status for Age 18+		
Respondent	135	57.4%
Proxy	50	21.3%
Mailed Diary	50	21.3%
Proxy 18+ Diary Completed		
Yes	48	96.0%
No	2	4.0%

Table 4. Characteristics of Completed Trips: MI Travel Counts Pilot

Characteristic	Frequency	Percent
Trip Status of Persons		
No Trip Persons	25	8.8%
Number of Travelers	258	91.2%
Number of Trips Reported	1,961	
Average Number of Trips Per Traveler	7.6	
Transportation Mode		
Car, van. Truck	1,786	91.1%
Motorcycle	1	0.1%
Walk	66	3.4%
School Bus	94	4.8%
Taxi/Shuttle	2	0.1%
Dial-A-Ride	4	0.2%
Public Bus	4	0.2%
Private Bus	4	0.2%
Driver Status		
Driver	1,381	77.8%
Passenger	397	22.2%
Drive Alone	1,036	57.9%
Activity at Destination		
Home – Paid Work	10	0.5%
Home – Other	650	33.1%
Work	329	16.8%
Attend School	117	6.0%
Eat Out	76	3.9%
Personal Business	197	10.0%
Everyday Shopping	184	9.4%
Major Shopping	43	2.2%
Religious/Community	33	1.7%
Social	60	3.1%
Recreation – Participate	43	2.2%
Recreation – Watch	14	0.7%
Accompany Another Person	16	0.8%
Pick Up/Drop Off Passenger	181	9.2%
Turn Around	9	0.5%

Mode and Trip Activity at Destinations distributions are reasonable compared with other similar travel studies. The number of zero-trip households is reasonable although some of the reasons for not traveling may be suspect. Primary reasons given were bad weather on the assigned travel days (snow), elderly persons who do not travel much, lack of a car for a person not working, and “didn’t have anywhere to go”.

Trip rates per traveler are somewhat lower than expected. This is probably attributable to overrepresentation in the Pilot sample of 1 and 2 person households and overrepresentation of elderly households. Trips per traveler reported declined on Day 2. Since snow was reported in many areas of Michigan on Day 2, weather may have contributed to this decline.

Appendix H_1 through H_4 provides the summary counts and frequencies for household, person, trips, and long distance trip study questions.

Solutions/Recommendations

As a result of the Pilot, the MORPACE Post-Processing Data Checks is attached as Appendix F. For the pilot, the following issues were faced:

SNAME (Person File)

SNAME was originally omitted from the data structure. This was an oversight by the research department. The variable was added and the data structure was updated accordingly prior to data delivery.

W1NAME and W1TYPE (Person File)

Originally, there were 11 cases missing these variables. These were the 11 cases that reported working only at home or having no fixed workplace (W1LOC=2 OR 3). They were asked W1NAME and W1TYPE, but the data processing department had not included the information in the original data file. The problem was identified and corrected before the pilot data was delivered.

NO TRAVEL PERSONS (Trip File)
For the 25 persons (TRIPNUM=0) that did not travel during the 48-hour travel period, the ORIGIN to ACT4 variables were originally blank in the data file. These variables were updated in the data file so that MDOT can see at what location the respondent spent the travel period.

VHNUM (Trip File)
There were 25 cases missing originally. These were cases where the household is a one-member household. The cases were correctly post-coded as "0" prior to data delivery.

DTIME and ATIME (Trip File)
The values for these variables are to be delivered in military time. MORPACE delivered the pilot data in a combination of military time and am/pm time. The research department did not check for or realize the mistake prior to data delivery, which was an oversight. A check has been added to the post-processing data checks to ensure that this mistake will not happen in the future.

Attached as Appendix G is PB's List of Post-Processing Data Checks.

MORPACE's Pilot frequency results (Appendix H) and post processing data checks show that data is consistent, missing data is minimal, and an appropriate level of data detail has been collected. To accomplish completed data information objectives and reach sampling targets, detailed sampling in-area monitoring will be necessary to assure proportional geographic representation and filling of sampling data cells. This monitoring will also be required to assure sampling representation by household size and age of persons and to determine whether decline rates in reported Day 2 trips are acceptable. Agreement with these goals is also expected to require the implementation of the following alternative strategies:

- Increasing callbacks to difficult to reach data cell households for both the recruit and the retrieval (including day time retrieval interviewing).
- Increasing sample replicates and/or ordering targeted sampling frames (such as supplemental income targeted RDD samples within sampling areas).
- Rescheduling recruited households who fail to complete the retrieval for all household members on their assigned travel days.
- Developing and implementing special techniques to assure acceptable Day 2 trip rates. Such techniques might include an interviewer script when 3 a.m. at the end of the first travel day is reached to the effect that "it is very important to the results of this study that you report as much detail about all of your locations and travel for this next 24 hours as you did for the last 24 hours."

As shown in Table 3 of this report (page 27), persons 65 years and older are over represented in the Pilot. Therefore, monitoring by age within sampling area using 2000 Census based percentages will be important. When percentages in the sample reach Census proportions, the following question will be added to the beginning of the recruit interview after the question "Are you 18 years old or older?": "Is anyone in your household under age 65?" If not, the household will be terminated. The interviewer will state: "Thank you for your willingness to participate but we already have completed sufficient interviews

with persons in your age category. May we call you back if we find we need your travel information for MI Travel Counts?"

Finally, as a part of quality control procedures, Parsons Brinckerhoff (PB) conducted audit checks of Pilot data as specified in the Data Coding and Quality Control Manual. PB's report of findings is attached as Appendix I. Findings were in three categories: (a) data inconsistencies, (b) review of non-geocodables, and (c) questionable trips due to time and speed checks.

- **Data Inconsistencies**

  Three minor data inconsistencies were found:

  1. (**See Table 2-1: Error in Departure/Arrival Time of PB Report in Appendix I)**
     Solution: A correction in this record has been made to show the ADAY (Arrival Day as "3"). In the datafile Day 1 will start at 3:00a.m. and go until 12:00a.m. on Day 1; Day 2 will start at 12:01a.m. and go to 12:00a.m. on Day 2; Day 3 will start at 12:01a.m. and go until 2:59a.m. on Day 3. In this way departure and arrival times can be read without confusions over the 48-hour period.

  2. **(See first paragraph of page 8 of PB Report in Appendix I) Two records were found with worker status "not working" but reporting work trips.**
     Solution: It has been agreed with PB that while "paid work at home" will not be allowed, work trips will be allowed for those not reporting "full or part time work". These two cases were elderly persons who differentiated between trips to church for religious purposes and trips to church for "work"

  3. **(See Table 3-1 Review of households with no travel) One respondent indicated that he/she did not travel because he/she went to a second job. This record should be reviewed.**
     Solution: MORPACE has reviewed this file and this was a 1-person household, older female, in Upper Peninsula Rural, whose first job is self-employed farmer (location at home) and whose second job is self-employed accountant (location at home). MORPACE recommends this record be kept.

- **Review of Non-Geocodables**
  (See Table 5-1: Review of Non-Geocodables in PB Report in Appendix I)

  Table 5: MORPACE Recommendations Regarding Non-Geocodables

Household	Locations	Comments/Changes
13	Krogers – Ann Arbor	More than One in Ann Arbor - Accept
36	BP and Perrysburg	Assign to External Cities - Accept
43	Residence	Not Geocoded - Accept
60	Bob's Store, Escanaba	Have Address, Not Geocodable - Accept
84	Mill Creek Village Residence	Have Address, Not Geocodable - Accept
98	While Consolidated is Electrolux in Greenville	Geocoded - Accept
204	Bus Stop	Geocoded Intersection - Accept
257	Louisiana Pacific and Restaurant	Have Louisiana Pacific Address, Not Geocodable - Accept
260	**Daughter's Workplace and Mother-in-Law's Residence**	**DELETE FROM DATAFILE**
204	Bus Stop and Neighbor's	Geocoded Bus Stop to Intersection - Accept
285	MSU Federal Credit Union	MDOT supplied address, however address/intersections not geocodable - Accept

Table 5: MORPACE Recommendations Regarding Non-Geocodables *(Continued)*

300	**Friend's Home and Mother-in-Law's Residence**	**DELETE FROM DATAFILE**
348	Residence and Town & Country	Town & Country Assign to External City - Accept
369	PJ Family Restaurant	Have Address, Not Geocodable - Accept
378	Tom Koch	Non-Geocodable - Accept
425	/fish Factory, Gas Station, Residence, Krogers, Tylers Terrace	Geocoded Fish Factory and Assign Others to External City - Accept
477	Kewadin Casino and Knights of Columbus	Geocoded Kewadin Casino - Accept
493	The Little Store	Geocoded - Accept
516	Friend's Home	5-person HH with 43 trips - Accept
542	Sister Lake School	Geocoded - Accept
545	Out of Country	Assign to External - Accept
385	Grand Haven/Rollerhaven Skate & Fun Center	This address was corrected by MDOT to Flint and geocoded - Accept

Solution: Delete Households 260 and 300 due to non-geocodables.

- **Review of Questionable Trips Due to Time and Speed Checks**
  (See Table 5-7: Review of Questionable Records Based on Quality Checks in PB Report in Appendix I)

Table 6: MORPACE Recommendations Regarding PB Quality Checks

Household	Person	Trip	Changes/Comments
1	1	6	Time Corrected to 20 Minutes – Accept
23	1	1	Time Corrected to 10 Minutes - Accept
24	**1**	**1**	**NOT CORRECTED – DELETE FROM DATAFILE**
43	3	7	Mode was School Bus - Accept
98	3	2	Mode was Private Bus, Corrected to 45 Minutes - Accept
100	**----**	**-----**	**NOT CORRECTED – DELETE FROM DATAFILE**
110	**----**	**-----**	**NOT CORRECTED – DELETE FROM DATAFILE**
124	2	3	Time Corrected to 35 Minutes - Accept
153	1	1	Time Corrected to 10 Minutes - Accept
153	2	10	Time Corrected to 5 Minutes - Accept
160	**1**	**3**	**NOT CORRECTED – DELETE FROM DATAFILE**
163	4	8	Time Corrected to 10 Minutes - Accept
175	1	1	Time Corrected to 115 Minutes - Accept
175	3	2	Mode was School Bus; Time Corrected to 38 Minutes - Accept
191	1	2	Time Corrected to 15 Minutes - Accept
200	2	4	Time Corrected to 30 Minutes - Accept
274	**----**	**-----**	**NOT CORRECTED – DELETE FROM DATAFILE**
335	2	6	Time Corrected to 20 Minutes - Accept
348	1	1	Time Corrected to 15 Minutes - Accept
385	**----**	**-----**	Once address corrected to Flint, times are O.K. - Accept
386	4	5	Time corrected to 15 Minutes - Accept
390	**----**	**-----**	**NOT CORRECTED – DELETE FROM DATAFILE**

Table 6: MORPACE Recommendations Regarding PB Quality Checks *(Continued)*

417	**1**	**5**	**NOT CORRECTED – DELETE FROM DATAFILE**
445	1	11	Took Car/Truck on Snowmobile Trail - Accept
468	1	10	Time Corrected to 5 Minutes - Accept
481	1	4	Time Corrected to 15 Minutes
491	**1**	**3**	**NOT CORRECTED – DELETE FROM DATAFILE**
492	**----**	**-----**	**NOT CORRECTED – DELETE FROM DATAFILE**
534	1	3	Time Corrected to 5 Minutes
564	2	4	Traffic Congestion – from Clarkston to doctor's in Waterford - Accept

Times were corrected through recalls and by comparing trip time to a similar trip taken between the same points during the travel period.

Based on PB findings, MORPACE-PB recommend that 11 households (8.7%), as shown in Table 5 and Table 6, be deleted from the final Pilot dataset (9 due to time and distance problems that could not be corrected and 2 based on missing more than one geocode for a location).

MORPACE recommends keeping PB's zip code file checks in regard to Table 5-2 as these may provide further information that can assist geocoding, when a city names are wrong.

To minimize time and distance problems for MI Travel Counts, MORPACE_PB have recommended to following changes:

1. Due to the number of short trips identified by PB's time and distance trips criteria for speed checks have been modified as follows:

   Trips less than 2 miles in length and also 30 minutes in time will be considered acceptable due to short distance and time. Trips that are flagged will have 10 minutes added and subtracted from the trip length and new speed computed. If the new speed is still not within the speed parameters, the record will be flagged and reviewed.

2. Adding a programmed question to the CATI to confirm with the respondent that the trip took over one hour to complete, when this is recorded. **(*HOUR_CHK)***

3. Increased emphasis on phone room supervisor and interviewer training in regard to time recording.

4. Adding these questions at the end of the daily travel collection:

   (AFTER DAY 2 TRAVEL IS COMPLETE, IF HOUR_CHK=01, ASK:)
   LONGTRIP Did any of the trips you've reported take significantly longer than usual?

   01 Yes
   02 No (GO TO LD_INT)
   08 Don't Know (Go to LD_INT)
   09 Refused (Go to LD_INT)

(IF LONGTRIP=01, ASK:)
REAS_LT Was this due to: (READ LIST)

01 Weather (rain or snow)
02 Construction
03 An accident
04 Traffic congestion

96 Other
99 Don't Know
100 Refused

16. Geocoding Procedures Manual

Description
All locations (home, school, work, and trip locations) are put through an extensive geocoding process according to the MI Travel Counts Geocoding Procedures Manual, which details the steps of geocoding. Specifically the process described as the "Geocoding Hierarchy" developed by the MDOT Geocoding Team and documented in the manual is being used for both the MI Travel Counts Pilot and program.

Initial Pilot Execution Successes and Difficulties
MORPACE used the address dictionary and files associated with the Michigan Geographic Framework (Version 3). MapInfo will be the software engine, but all addresses were geocoded first to Framework v3 with MapMarker Plus GDT files as a back-up. All geocoding was performed interactively, first to street address and then to street intersection.

The MI Travel Counts Pilot geocoding results are the best predictor of geocoding rates for the full data collection effort. The Pilot geocoded results (See Table 7 and Pilot Report Appendix J) are calculated separately for home, work, school, trip, and start-trip locations (if the person started their travel at a location other than home). It should be noted that the trip file does not include home, work, and school locations that will later be integrated back in the complete origin and destination trip file, thereby increasing trip file geocoding rate. For the Pilot, using Framework with MapMarker Plus files as a back-up, MORPACE was able obtain the rates as shown in Table 7.

Table 7. Geocoding Results - MI Travel Counts Pilot

Type of Geocoding	*Frequency*	*Percent*
Home Location		
MGF Street Level	83	66.0%
MapMarker Street Level	40	32.0%
MGF Intersection	0	0.0%
MapMarker Intersection	3	2.0%
TAZ	126	100.0%
Non-Geocodable	0	0%
Total	*126*	*100.0%*
Primary Work Locations		
MGF Street Level	65	50.0%
MapMarker Street Level	51	39.0%
MGF Intersection	8	6.0%
MapMarker Intersection	4	3.0%
TAZ	128	98.0%
Non-Geocodable	2	2.0%

Table 7: Geocoding Results: MI Travel Counts Pilot
(Continued)

Ohio	0	0.0%
Illinois	0	0.0%
Wisconsin	1	0.0%
Indiana	0	0.0%
Canada	0	0.0%
Other	0	0.0%
Total	*131*	*100.0%*
Secondary Work Locations		
MGF Street Level	8	62.0%
MapMarker Street Level	4	31.0%
MGF Intersection	0	0.0%
MapMarker Intersection	0	0.0%
TAZ	12	92.0%
Non-Geocodable	1	8.0%
Ohio	0	0.0%
Illinois	0	0.0%
Wisconsin	0	0.0%
Indiana	0	0.0%
Canada	0	0.0%
Other	0	0.0%
Total	*13*	*100.0%*
School Locations		
MGF Street Level	31	58.0%
MapMarker Street Level	21	40.0%
MGF Intersection	0	0.0%
MapMarker Intersection	1	2.0%
TAZ	53	100.0%
Non-Geocodable	0	0.0%
Total	*53*	*100.0%*
Start Locations (Not Home)		
MGF Street Level	2	33.0%
MapMarker Street Level	3	50.0%
MGF Intersection	0	0.0%
MapMarker Intersection	0	0.0%
TAZ	5	83.0%
Non-Geocodable	1	17.0%
Ohio	0	0.0%
Illinois	0	0.0%
Wisconsin	0	0.0%
Indiana	0	0.0%
Canada	0	0.0%
Other	0	0.0%
Total	*6*	*100.0%*
Trip		
MGF Street Level	325	49.0%
MapMarker Street Level	235	35.0%
MGF Intersection	44	7.0%
MapMarker Intersection	22	3.0%
TAZ	626	96.0%
Non-Geocodable	26	4.0%

Table 7: Geocoding Results: MI Travel Counts Pilot *(Continued)*		
Ohio	12	2.0%
Illinois	0	0.0%
Wisconsin	1	0.0%
Indiana	0	0.0%
Canada	0	0.0%
Other	0	0.0%
Total	*665*	*100.0%*

The three home locations that could only be geocoded to street intersection were all in the Upper Peninsula and all were without specific street numbers. 100% of home addresses were geocoded to Traffic Analysis Zones (TAZs).

One of the primary work non-geocodables has a verifiable address, but neither system could geocode to the street address or intersection level. For the other non-geocodable, no address for the business name given can be found in Greenville, MI. One other primary work location is in Wisconsin.

For trips, (13) were located outside Michigan (Ohio and Wisconsin), while 4% (26) were non-geocodable. Of the non-geocodables, 4 of 26 (96%) are verifiable addresses that could not be geocoded to an x,y coordinate using either system..

Solutions/Recommendations
Once MORPACE overcame technical difficulties with fully integrating Framework v3 with MapMarker Plus files so that each could by used interactively geocoding to Framework first, then MapMarker the geocoding proceeded as planned. Pilot geocoding rates exceeded guidelines as specified in the Geocoding Procedures Manual, which are for x,y coordinates to the street or intersection level:

- 99% or better for home
- 95% or better for school and work locations
- 90% or better for trip locations
- 95% or better geocoded to TAZ

Geocoding results code show which system (Framework or MapMarker) assigned the coordinates. As a result of the Pilot MapMarker offset was reset to 25 feet and the geocoding was performed again. No recommendations outside those specified in the Geocoding Procedures Manual are made as a result of the Pilot, since goals were met.

D. Subconsultant Reviews

Richard Nellett, RLN Transportation Planning
My review of the MDOT MI Travel Counts Revised Pilot Report found that MORPACE has done a very good job of responding to MDOT's February 25, 2004 comments on the Draft Pilot Report. Specifically the format was revised addressing each instrument separately as requested by first providing a general statement of fact (what was done), identifying what worked and what didn't, and providing recommended changes where warranted. The addition of the documentation in the Appendices has further strengthened the initial pilot report documentation.

It is noted that the most significant issues identified in the February 25th meeting related to geocoding based on the framework network.

Regarding the pilot recruitment and retrieval process, I was very impressed in how well it went and with the professionalism of the MORPACE survey staff. This was obviously the result of a well thought out game plan and survey instrument. Regarding the Pilot Report, overall this report is the most thorough documentation of any activity that I have been involved with in my professional career. Both MDOT's

Planning staff and MORPACE should be congratulated for this superior product. I look forward to a successful completion of the full survey.

Peter Stopher, Ph.D., PlanTrans
At this time, I have reviewed the body of the report in detail, but have only reviewed selected appendices. On the calculation of response rates – the first method used is essentially the CASRO method, which results in an exaggeratedly low response rate. It is not a recommended method. The second method, used by Westat errs in the opposite direction, being too generous. The method being recommended in the NCHRP report is the AAPOR (RR3) method with the eligibility rate for the unknown eligibility units being assumed at a figure around 20 percent, unless there is good local evidence to provide an alternative figure. This would produce a result that is more or less midway between the two methods used in the report. I recommend adopting this method.

The results reported in items 1- 4 on pages 8-9 of the report are not unexpected, especially with a 48-hour diary. These indicate an expected result from a pilot of this nature.

On page 17, there are comments about the age question. From past experience, I would advocate asking not for age but for year of birth, which people are so used to providing for so many forms that it is often given without thinking further about it.

The results in Table 3 show the usual biasing towards females in the responses, which is typical of all travel surveys. As noted in the text and shown in Table 4, the trip rate is lower than might be expected, although the non-mobility (no trip persons) rate is in a very acceptable range. This suggests that people are not reporting all trips. I had hoped that Appendix H contained a breakdown of the numbers of trips collected on each of the two days, so as to see the drop off in trip reporting. However, I was unable to find it. I would like to know what the average trip rate is on each of day 1 and day 2. Also, as I expected, there is a bias in the day of week data by using the three pairs of Monday/Tuesday, Tuesday/Wednesday, and Wednesday/Thursday, with over-representation of travel for Tuesday and Wednesday. It would also be useful to examine trip rates by day of week, and separately for day 1 and day 2. Because of the expected drop off in reporting on the second day, the rate for Thursday would be expected to be significantly under-estimated. *(Note: The sample size for the Pilot was insufficient to show statistically significant differences in average trip rates by day of the week or between sampling areas. Comparison of trip rates by day of the week and by sampling area will be shown as a part of Interim Reports.)*

Although the modeling will be undertaken on trip tours, it would be useful at this point to see a breakdown of trip rates by conventional trip purposes, such as home-based work, home-based school, home-based shop, home-based other, other-work and other-other. This would allow us to determine the extent to which any trip purpose is apparently under- or over-reported. *(Note: Comparisons in average trip rates by aggregated conventional trip purposes will not be shown as a part of Interim Reports as extensive modeling analysis is required to construct these rates.)*

Apart from this, from my viewpoint, this appears to have been a successful pilot that promises well for the full survey. The few changes that have been made are useful and show the value of the pilot survey process. I feel that MORPACE is to be congratulated on a very good pilot survey, that has helped to refine the final procedures in important ways, and that paves the way for a high quality survey.

March 17, 2004
"While I have not seen the issue before with the over-representation of the elderly in the pilot, I have also not seen pilots that are as short in duration of recruitment as this one was. I found Laurie's explanation to be perfectly plausible and sensible. I also see no problem with the fix that she has suggested, in the event that it turned out that the over-representation was not just a pilot survey characteristic, but was endemic to the survey. However, this is just one of a number of things that will need to be watched as the main survey progresses, and possible action taken to focus the later stages of data collection on under-represented segments of the sample.

Comments from Parsons-Brinckerhoff are included as Appendix I